

REMARKS

The foregoing claim amendment amends claims 1 and 7, and cancels claims 2-6, 9-10 and 15-16. Pending in the application are claims 1, 7-8 and 11-14, of which claims 1 and 7 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Patentable Subject Matter

Claims 10-14 and 16 are indicated to recite patentable subject matter and would be allowable if rewritten in independent form.

Objection to Claim 6

Claim 6 is objected to under 37 C.F.R. 1.75 as being a substantial duplicate of claim 5. In the foregoing claim amendments, Applicants cancel claim 6. In light of the foregoing claim amendments, Applicants submit that the objection to claim 6 is moot, and hence request that the Examiner reconsider and withdraw the objection to claim 6.

Double Patenting Rejections

Claims 3, 5 and 6 are rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,773,837. In the foregoing claim amendments, Applicants cancel claims 3, 5 and 6. In light of the foregoing claim amendments, Applicants submit that the rejection of claims 3, 5 and 6 is moot, and hence request that the Examiner reconsider and withdraw the rejection of claims 3, 5 and 6.

Rejection of Claims 1 and 7 under 35 U.S.C. §112, First Paragraph

Claims 1 and 7 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner asserts in the Office Action that the specification does not support the limitation of first controlling the compressor to change the

amount of a cathode gas supplied to the fuel cell at the start of a transition period, as recited in claims 1 and 7. See the Office Action, page 3, lines 20-21. Applicants respectfully disagree.

Applicants submit that the descriptions and figures of the pending application, for example, Fig. 4 and corresponding descriptions at pages 12-16 of the specification support this limitation of the claimed invention. In particular, the step (S4) describes controlling of the revolution number of the supercharger (7B) in order to increase the airflow amount (Q) to the target airflow amount (QT). This increase of the airflow amount (Q) toward the target airflow amount (QT) is shown in Fig. 5 of the pending application. Additionally, the step (S8) describes controlling of the opening of the backpressure control valve (8A) in order to set the opening of the backpressure control valve (8A) to be a γ value, which is determined based on the airflow amount (Q). In the control of the opening of the backpressure control valve (8A), the γ value is decreased during the initial stage of the increase of the airflow amount (Q), and thereafter increased following the increase of the airflow amount Q. This mechanism of the present invention enables the air pressure at the cathode inlet side of the fuel cell to be increased without being decreased during a transition period. See the pending application, page 15, lines 10-13 and Fig. 5. Applicants therefore submit that the descriptions and figures of the pending application enable those of ordinary skill in the art to implement the present invention without undue experiments.

The Examiner also asserts that the specification does not provide enabling disclosure for the limitation of controlling the compressor, as recited in claims 1 and 7. The specification of the present application discloses a unit (11A) for setting a target power generation amount, a unit (11B) for setting a target airflow amount, a unit (11C) for feedback-controlling an airflow amount, and a unit (11D) for outputting a control signal for controlling the power driving unit. These units are described in more detail at page 7, line 35 through page 10, line 3 with reference to Fig. 2 of the pending application. This disclosure of the pending application enables those of ordinary skill in the art to control a compressor to change the amount of a cathode gas supplied to the fuel cell, as recited in claims 1 and 7.

In light of the foregoing arguments, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1 and 7 under 35 U.S.C. §112, first paragraph, and pass the claims to allowance.

Rejection of Claims under 35 U.S.C. §112, second Paragraph

Claims 10-14 and 16

Claims 10-14 and 16 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Office Action states that the terms “start” and “initial stage” recited in claims 1 and 11, respectively, are indefinite because the relationship between “start” and “initial stage” is unclear. In the foregoing claim amendments, Applicants amend claims 1 and 7 to incorporate the subject matter of claims 10 and 16, respectively, and cancel claims 10 and 16. Applicants also amend claims 1, 11-14 and 16 to address the issue raised by the Examiner in the Office Action. Applicants therefore request that the Examiner reconsider and withdraw the rejection of claims 10-14 and 16 under 35 U.S.C. §112, second paragraph, and pass the claims to allowance.

Claims 1, 3, 7 and 10-16

Claims 1, 3, 7 and 10-16 are rejected under 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. The Examiner asserts that the specification and claims 10-14 describe that “the first control is to the pressure valve.” See the Office Action, page 5, lines 5-9. The Examiner appears to understand that the claimed invention controls the pressure control valve first in a transition period. Applicants submit that the present invention first controls the compressor to control the amount of the cathode gas, and then controls the pressure valve based on the changed amount of the cathode gas.

The specification of the present application supports this feature of the claimed invention. For example, Fig. 4 and corresponding descriptions at pages 12-16 describes that in the step (S4), the revolution number of the supercharger (7B) is controlled to converge the airflow amount (Q) to the target airflow amount (QT). In the following step (S8), the opening of the backpressure control valve (8A) is then controlled to set the opening of the backpressure control valve (8A) to be a γ value that is determined based on the airflow amount (Q). In light of this, Applicants submit that the descriptions and figures of the present application support that

the compressor is first controlled to change the amount of the cathode gas and then the pressure valve is controlled to change the pressure of the cathode gas based on the changed amount of the cathode gas. Applicants therefore request that the Examiner reconsider and withdraw the rejection of claims 1, 3, 7 and 10-16 under 35 U.S.C. §112, second paragraph, and pass the claims to allowance.

Claims 3, 5 and 6

Claims 3, 5 and 6 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In the foregoing claim amendments, Applicants cancel claims 3, 5 and 6. In light of the foregoing claim amendments, Applicants submit that the rejection of claims 3, 5 and 6 is moot, and hence request that the Examiner reconsider and withdraw the rejection of claims 3, 5 and 6.

Rejections of Claims 1, 3, 5, 6, 7 and 8 under 35 U.S.C. §102

Claims 1, 3, 5, 6, 7 and 8 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,366,821 (“Merritt”). Applicants respectfully traverse this rejection for the following reasons.

In the foregoing claim amendments, independent claims 1 and 7 are amended to incorporate the patentable subject matter of dependent claims 10 and 16, respectively. Claims 3, 5 and 6 are canceled. Claim 8 depends from claim 1 and adds separate and patentable limitations to claim 1. In light of the foregoing claim amendments, Applicants submit that the present invention is in condition for allowance, and hence request that the Examiner reconsider and withdraw the rejection of claims 1, 3, 5, 6, 7 and 8 under 35 U.S.C. §102(b), and pass the claims to allowance.

Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: June 9, 2006

Respectfully submitted,

By 
EuiHoon Lee

Registration No.: L0248
LAHIVE & COCKFIELD, LLP
28 State Street
Boston, Massachusetts 02109
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant